

WHAT IS CLAIMED IS:

- Sub A-11
1. A pharmaceutical composition for the inhibition or treatment of tumorigenesis comprising an antisense nucleic acid complementary to at least a portion of an RNA transcript of a Nr-CAM gene in an amount effective to inhibit hyperproliferation of a tumor cell.
- 10 2. A pharmaceutical composition for the inhibition or treatment of tumorigenesis comprising an antibody to Nr-CAM in an amount effective to inhibit hyperproliferation of a tumor cell.
- Sub A-12
- 15 3. A method of treating, inhibiting or preventing a disease or disorder involving cell overproliferation in a subject comprising administering to a subject in which such treatment or prevention is desired an effective amount of a molecule that inhibits Nr-CAM function.
- 20 4. The method according to claim 3 in which the disease or disorder is a malignancy.
- Sub B-10
- 25 5. The method according to claim 3 in which the disease or disorder is selected from the group consisting of brain cancer, leukemia and B cell lymphoma.
6. The method according to claim 3 in which the subject is a human.
- 30 7. The method according to claim 5 in which the brain cancer is selected from the group consisting of glioblastoma, glioma, meningioma, astrocytoma, medulloblastoma, neuroectodermal cancer and neuroblastoma.

8. The method according to claim 7 in which the glioblastoma is glioblastoma multiforme.

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9. The method according to claim 3 in which the disease or disorder is selected from the group consisting of premalignant conditions, benign tumors, hyperproliferative disorders, and benign dysproliferative disorders.

10. The method according to claim 3 in which the molecule that inhibits Nr-CAM function is selected from the group consisting of an anti-Nr-CAM antibody or a fragment thereof, a Nr-CAM derivative or analog that is capable of being bound by an anti-Nr-CAM antibody, a Nr-CAM antisense nucleic acid, and a nucleic acid comprising at least a portion of a Nr-CAM gene into which a heterologous nucleotide

15 sequence has been inserted such that said heterologous sequence inactivates the biological activity of at least a portion of the Nr-CAM gene, in which the Nr-CAM gene portion flanks the heterologous sequence so as to promote homologous recombination with a genomic Nr-CAM gene.

20 11. The method according to claim 3 in which the molecule that inhibits Nr-CAM function is an oligonucleotide which (a) consists of at least six nucleotides; (b) comprises a sequence complementary to at least a portion of an RNA

25 transcript of a Nr-CAM gene; and (c) is hybridizable to the RNA transcript under moderately stringent conditions.

30 12. A method of inhibiting, treating or preventing a disease or disorder involving cell proliferation in a subject comprising administering to a subject in need of such treatment an effective amount of a molecule that promotes Nr-CAM function.

13. The method according to claim 12, in which the disease or disorder is selected from the group consisting of degenerative disorders, growth deficiencies, hypoproliferative disorders, physical trauma, lesions, and wounds.

14. A method of diagnosing a disease or disorder characterized by an aberrant level of Nr-CAM RNA or protein in a subject, comprising measuring the level of Nr-CAM RNA or protein in a sample derived from the subject, in which an increase or decrease in the level of Nr-CAM RNA or protein, relative to the level of Nr-CAM RNA or protein found in an analogous sample from another subject not having the disease or disorder, indicates the presence of the disease or disorder in the subject.

15. A method of diagnosing or screening for the presence of or a predisposition for developing a disease or disorder involving cell overproliferation in a subject comprising detecting Nr-CAM DNA, RNA or protein derived from the subject in which the presence of said Nr-CAM DNA, RNA or protein indicates the presence of the disease or disorder or a predisposition for developing the disease or disorder.

16. A kit comprising in one or more containers a molecule selected from the group consisting of an anti-Nr-CAM antibody, a nucleic acid probe capable of hybridizing to a Nr-CAM RNA, a pair of nucleic acid primers capable of priming amplification of at least a portion of a Nr-CAM nucleic acid, an anti-Nr-CAM ligand antibody, a nucleic acid probe capable of hybridizing to an Nr-CAM ligand encoding RNA and a pair of nucleic acid primers capable of priming amplification of at least a portion of an Nr-CAM ligand encoding nucleic acid.

17. A pharmaceutical composition for the inhibition or treatment of tumorigenesis comprising an antisense nucleic acid complementary to at least a portion of an RNA transcript of an Nr-CAM ligand encoding gene in an amount effective to inhibit hyperproliferation of a tumor cell.

18. A pharmaceutical composition for the inhibition or treatment of tumorigenesis comprising an antibody to an Nr-CAM ligand encoding gene in an amount effective to inhibit hyperproliferation of a tumor cell.

19. A method of inhibiting, treating or preventing a disease or disorder involving cell overproliferation in a subject comprising administering to a subject in which such treatment or prevention is desired an effective amount of a molecule that inhibits an Nr-CAM ligand encoding gene function.

20. A method of diagnosing a disease or disorder characterized by an aberrant level of an Nr-CAM ligand encoding RNA or protein in a subject, comprising measuring the level of an Nr-CAM ligand encoding RNA or protein in a sample derived from the subject, in which an increase or decrease in the level of said RNA or protein, relative to the level of said RNA or protein found in an analogous sample from another subject not having the disease or disorder, indicates the presence of the disease or disorder in the subject.

21. A method of diagnosing or screening for the presence of or a predisposition for developing a disease or disorder involving cell overproliferation in a subject comprising detecting an Nr-CAM ligand encoding DNA, RNA or

protein derived from the subject in which the presence of said DNA, RNA or protein indicates the presence of the disease or disorder or a predisposition for developing the disease or disorder.

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